A careful examination of the fish shows, however, that it must be classed as a true sea or salmon trout, although, as has been found invariably to be the case in Otago specimens, it presents a certain admixture of the characters of the many species into which the sea trouts from the various rivers in Europe have been subdivided.

The specimen proves to be a female that has just spawned. For the length of twenty-five inches its weight, four pounds, is small, but it is evidently lanky and out of condition, as otherwise it would have been a six pound fish. The stomach contained half-digested remains of a young barracouta *(Thyrsites atun)* and a sea mullet *(Agonostoma forsteri)*, each about nine inches long, proving that it must have been feeding voraciously in salt water. The importance of this determination is due to the fact that the only salmon trout ever introduced to New Zealand were bred from a small lot of ova that came from Tasmania, in 1870, and of which the original stock, turned out in Shag River, Otago, did not exceed seventy or eighty fish. What are supposed to be the progeny of these now abound on the Otago coast, and this discovery might seem to point to its having spread in its migration round the coast as far as Blind Bay. On the other hand, it might be suggested that what we know as brown trout in the rivers are of the large fast-growing variety known as the Thames trout, but which, in New Zealand, enter the sea and acquire the characters of the true sea trout.

Art. XXVIII.—*On two Species of* Nudibranchiate Mollusca.

By T. F. Cheeseman, F.L.S.

[*Read before the Auckland Institute, 5th September*, 1881.]

Doris luctuosa, n.sp.

Length 1–2 inches. Body oblong or linear-oblong, back moderately rounded. Mantle small, rather narrow and hardly concealing the sides of the foot, smooth and soft to the touch, of a dirty flesh-brown more or less spotted or streaked with reddish-brown; occasionally dirty white with a few reddish-brown markings. Towards the sides of the mantle the reddish-brown markings are often arranged in more or less interrupted lines. Dorsal tentacles (rhinophores) stout, clavate, completely retractile within raised sheaths, strongly laminate, laminæ over 20 in number. The laminæ are blotched with dark purple and greenish-yellow, the tips of the sheaths are usually greenish-yellow. Branchiæ 5, rarely 6, forming an incomplete circle round the tubular anus, bipinnate or tripinnate, rounded at

the apex, flatly spreading; colour dark-purplish, sometimes mingled with greenish-yellow. The branchiæ are capable of complete retraction within a common cavity, the edges of which have usually a greenish-yellow tinge. Foot large, with thick and high sides, sole uniform flesh colour. Mouth large, tubular. Oral tentacles unusually long, slender, linear, cylindrical, often protruding beyond the edge of the mantle when the animal is crawling. Odontophore broad, of about 28 rows of teeth. No central teeth, lateral about 60 on each side, smooth, strongly arched, all similar in shape.

I have obtained several specimens of this species on rocky ground in Auckland Harbour.

Doridopsis mammosa, Abraham, P.Z.S. 1877, p. 266, pl. XXIX., figs. 20, 21.

Mr. Abraham states that this species was collected by the Antarctic Expedition, but its native country appears to be unknown to him. I have no doubt, however, that it is identical with a species found abundantly on *Zostera* beds from Mongonui to the East Cape, and perhaps further south. The Antarctic Expedition probably obtained it at the Bay of Islands, where it is not uncommon. The following description, drawn up from fresh specimens, will afford some information on certain points, such as colour, etc., which could not be made out from the alcoholic specimens described by Mr. Abraham.

Body 2–4 inches long, broadly elliptical, back moderately elevated. Mantle large, usually extending on all sides beyond the foot, margins thin and semi-transparent, much undulated. On each side of the back is a row of 3 or 4 large conical or clavate erect processes; two similar ones are placed close together between the dorsal tentacles. Numerous much smaller tubercles are scattered irregularly over the back and sides. Along the back, between the processes, is a median row of three (rarely two) large lozenge-shaped smooth areas, free from tubercles or projections of any kind. On each side, a similar row of four or five smooth areas extends from the dorsal tentacles to the branchiæ, on the outside of the row of processes. These areas are coloured a deep velvety brown-black, and each contains a central spot and a few lateral specks or streaks of an intense greenish-blue, of almost metallic lustre. The remainder of the mantle is a light brown or fawn colour, always marked (especially towards the margins), with numerous delicate whitish or greyish parallel longitudinal lines, which are more or less continuous towards the margins, but are irregular and broken on the back. Dorsal tentacles (rhinophores) rather small, clavate, the upper portion bent and diagonally laminated, tip thickened and rounded; the whole retractile into cavities that have raised sheath-like edges. Bran-

chiæ 5, large, copiously branched, tripinnate, set round the anus in a circle interrupted behind, retractile within a common cavity; this cavity has its opening irregularly 5-lobed, the lobes more or less tubercled. The pinnules of the branchiæ are lineated and tipped with black, the remainder being a waxy white. Foot rounded in front and behind, margin thin and undulated. There is a narrow notch in front, giving passage to the tubular proboscis; and immediately above it, in the groove between the foot and the mantle, are two minute flap-like projections. No odontophore, or buccal armature of any description.

Art. XXIX.—*Further Notes on* Coccidæ *in New Zealand, with Descriptions of new Species.* By W. M. Maskell, Fel. Roy. Micros. Soc.

[*Read before the Philosophical Institute of Canterbury, 1st September,* 1881.]

Plates XV. and XVI.

1st Group.—DIASPIDÆ.

(Trans., vol. xi., p. 189).

1st Genus, **Mytilaspis,** Linn.

(Trans., vol. xi., p. 192).

1. *Mytilaspis pyriformis*, mihi.

(Trans., vol. xi., p. 194).

I have lately succeeded in hatching out a male of this species. The insect (fig. 1) is orange-coloured, about $\frac{1}{30}$ inch long, of the normal form, generally, of the Diaspidæ; the abdominal spike is of considerable length. Antennæ (fig. 2) 10-jointed; foot (fig. 3) with four long fine digitules. Haltere (fig. 4) normal.

As remarked in a former paper (Trans. vol. xii., p. 294), the males of the Diaspidæ are not easily distinguishable. There is little certainty to be obtained except by hatching from the puparia, and even then, as the puparia are often similar, it is easy to make mistakes.

2. *Mytilaspis leptospermi*, sp. nov.

Puparium irregularly pyriform, flat, light-brown, formed (besides the two pellicles) chiefly of the bark-cells of the tree arranged longitudinally. The pellicle of the second stage is comparatively small.

Young insect normal.

Adult female greyish-green, generally resembling *M. pyriformis*. Abdomen ending in six lobes, of which the two median are conspicuous and somewhat large and floriated, the rest very small. Five distinct groups of spinnerets, the upper group with about 15 openings, the others with from 25 to 35. Single spinnerets none, or very few.